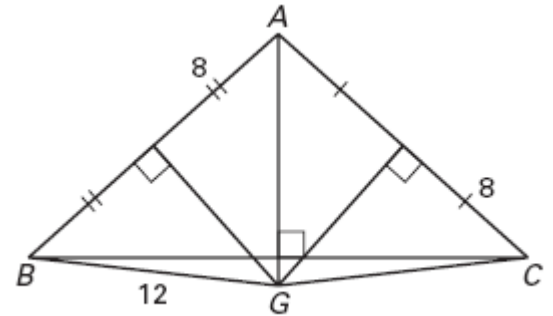


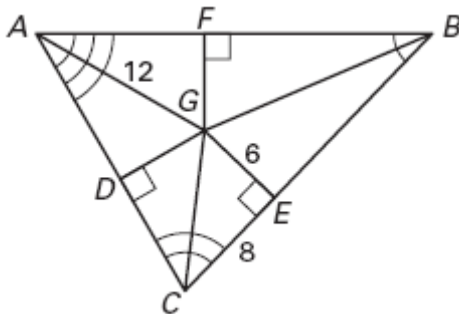
Geometry Date_____ 5.2 Assignment **Bisectors in a triangle (pp 272-274)**

s1. What is your name?

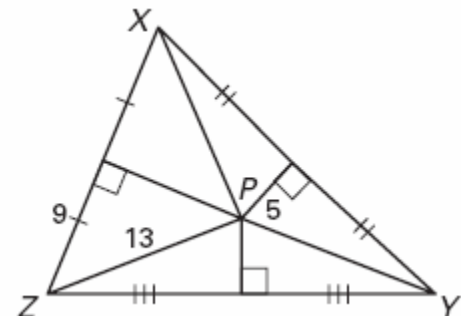
2. The perpendicular bisectors of $\triangle ABC$ meet at point G. Find GA.



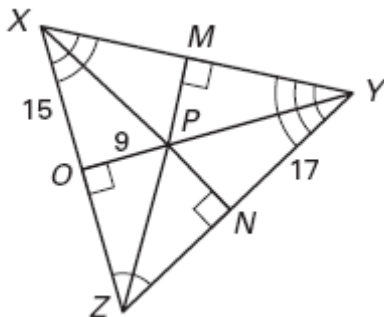
3. The angle bisectors of $\triangle ABC$ meet at G. Find GD.



4. The perpendicular bisectors of $\triangle XYZ$ meet at P. Find PX.



5. The angle bisectors of $\triangle XYZ$ meet at P. Find PM.



Geometry Date_____ 5.2 Assignment **Bisectors in a triangle (pp 272-274)**

6. Complete the proof of the Concurrency to angle bisectors theorem.

Given: $\triangle ABC$ with the bisectors of $\angle A$, $\angle B$, & $\angle C$.

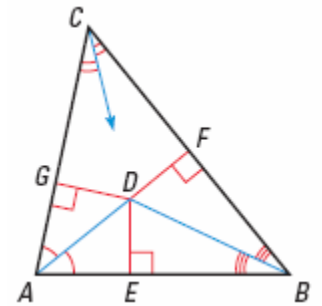
$$\overline{DE} \perp \overline{AB}$$

$$\overline{DF} \perp \overline{BC}$$

$$\overline{DG} \perp \overline{CA}$$

Prove: The angle bisectors intersect at a point that is equidistant from \overline{AB} , \overline{BC} , & \overline{CA} .

Plan for Proof: Show that **D**, the point of intersection of the bisectors of $\angle A$ & $\angle B$, also lies on the bisector of $\angle C$. Then show that **D** is equidistant from the sides of the triangle.



Statements	Reasons
$\triangle ABC$ with the bisectors of $\angle A$, $\angle B$, & $\angle C$; $\overline{DE} \perp \overline{AB}$, $\overline{DF} \perp \overline{BC}$, $\overline{DG} \perp \overline{CA}$	Given
$\underline{\hspace{1cm}} = DG$	\overline{AD} bisects $\angle BAC$, so D is _____ from sides of $\angle BAC$.
$DE = DF$	
$DF = DG$	
D is on the _____ of $\angle C$.	Converse of the angle bisector theorem.
	Given and steps 2-4.

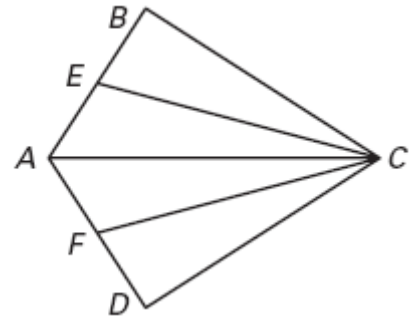
Geometry **Date** _____ **5.2 Assignment**
Bisectors in a triangle (pp 272-274)

Given: $\triangle ABC \cong \triangle ADC$

\overline{CE} bisects $\angle BCA$.

8. \overline{CF} bisects $\angle DCA$.

Prove: $\triangle CEA \cong \triangle CFA$



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"Jerome is writing a book,
'How to Get Organized.'"

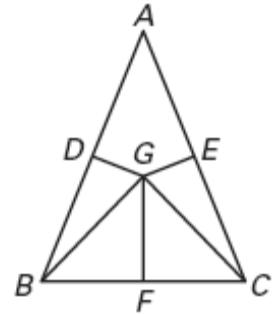
Geometry Date _____ 5.2 Assignment
Bisectors in a triangle (pp 272-274)

Given: Isosceles $\triangle ABC$ with $\overline{AB} \cong \overline{AC}$

\overline{GD} is the \perp bisector of \overline{AB} .

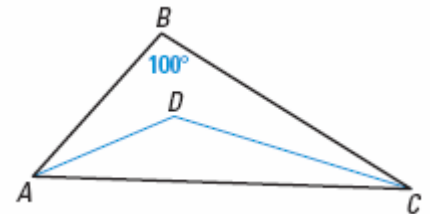
9. \overline{GE} is the \perp bisector of \overline{AC} .

Prove: $\triangle GDB \cong \triangle GFC$



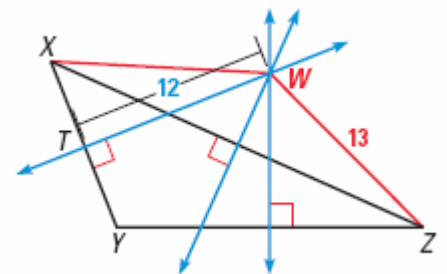
10. _____ \overline{AD} & \overline{CD} are angle bisectors of $\triangle ABC$ & $m\angle ABC = 100^\circ$. **Find** $m\angle ADC$.

- A. 80°
- B. 90°
- C. 100°
- D. 120°
- E. 140°



11. _____ The perpendicular bisectors of $\triangle XYZ$ intersect at W. $WT = 12$ & $WZ = 13$. **Find XY.**

- A. 5
- B. 8
- C. 10
- D. 12
- E. 13



Geometry Date_____ 5.2 Assignment
Bisectors in a triangle (pp 272-274)

Review.

Find the area of the triangle described. (Chapter 1 Section 7)

12. base = 9, height = 5

13. base = 22, height = 7

The line with the given equation is perpendicular to line j at point P . Write an equation of line j . (Chapter 3 Section 7)

14. $y = 3x - 2$; $P(1, 4)$

15. $y = -\frac{2}{3}x - 1$; $P(2, 8)$

16. $y = -2x + 5$; $P(7, 6)$

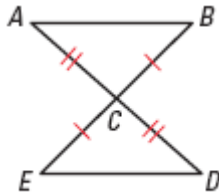
17. $y = \frac{10}{11}x + 3$; $P(-2, -9)$



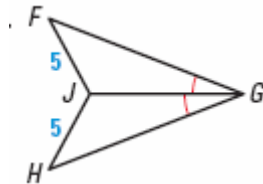
Geometry Date_____ 5.2 Assignment
Bisectors in a triangle (pp 272-274)

State whether enough information is given to prove that the triangles are congruent. If there is enough information, tell which congruence postulate or theorem you would use. (Chapter 4 Sections 3 & 4)

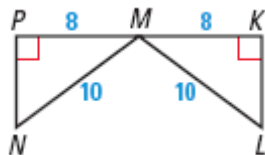
18.



19.



20.



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"Statistics are meaningless. And that's
true 90 percent of the time."